NON-PUBLIC?: N
ACCESSION #: 8902070150
LICENSEE EVENT REPORT (LER)

FACILITY NAME: Susquehanna Steam Electric Station - Unit One PAGE: 1 of 3

DOCKET NUMBER: 05000387

TITLE: Inadvertent Instrument Air Isolation Results In Automatic Reactor Shutdown
EVENT DATE: 01/04/89 LER #: 89-001-00 REPORT DATE: 02/02/89

OPERATING MODE: 1 POWER LEVEL: 060

THIS REPORT IS SUBMITTED PURSUANT TO THE REQUIREMENTS OF 10 CFR SECTION
50.73(a)(2)(iv)

LICENSEE CONTACT FOR THIS LER:
NAME: Thomas S. Ryder, Power Production Engineer TELEPHONE #: 717-542-3235

SUPPLEMENTAL REPORT EXPECTED: No

ABSTRACT: At 0240 hours on January 4, 1989, Unit 1 experienced an automatic shutdown following a Reactor Protection System actuation. In anticipation of the scram, Operations reduced power from 100% to 60% to minimize the effect of the anticipated transient. Operations inadvertently isolated Instrument Air to instrumentation which eventually resulted in a loss of Main Condenser vacuum, a Main Turbine trip, and an ensuing reactor shutdown. All equipment operated per design during the transient and ESF systems were not challenged. The event has been determined to be reportable per 10CFR50.73(a)(2)(iv), in that an unplanned RPS actuation occurred. A contributing factor leading into this event was the reduced reliability of the Unit 1 I/A system due to planned maintenance activities. Loss of status control and omissions from the Unit 1 I/A Operating Procedure are considered the root causes. Corrective actions will consist of implementing programmatic changes to provide an improvement in the system of tracking equipment and valve status. The Unit 1 I/A Operating Procedure will be revised to include the omitted section.

(End of Abstract)

TEXT: PAGE: 2 of 3

DESCRIPTION OF EVENT

At 0240 hours on January 4, 1989, Unit 1 experienced an automatic shutdown following a Reactor Protection System (RPS, EIIS Code: JC) actuation. Power had been reduced from 100% to 60% prior to the actuation to minimize the effect of the anticipated transient. The sequence of events was as follows: (1) Instrument Air (I/A, EIIS Code: LD) was inadvertently isolated to the Unit 1 Cooling Tower Basin level instrumentation; (2) The instrumentation sensed a false low basin level and automatically tripped Circulating Water Pumps "A thru D" (EIIS Code: KE); (3) Due to the loss of circulating water, Main Condenser (EIIS Code: SG) vacuum decreased to the point where the Main Turbine (EIIS Code: TA) automatically tripped per design; (4) The Main Turbine trip initiated an RPS actuation via the Control Valve Fast Closure signal.

REPORTABILITY/ANALYSIS

The event has been determined to be reportable per 10CFR50.73(a)(2)(iv), in that an unplanned RPS actuation occurred. All equipment operated per design during the transient and ESF systems were not challenged. There were no safety consequences or compromise to public health or safety during this incident.

CAUSE OF EVENT

On January 1, 1989, in preparation for planned maintenance activities on the "B" I/A Dryer Skid towers, Operations swapped common Circulating Water Pump House (CWPH) I/A loads, normally supplied by Unit 1, to Unit 2 I/A. The swapping of common loads to Unit 2 was recommended due to the reduced reliability of the system with one dryer skid tower out-of-service. By performing this action, Unit 1 I/A would be placed in a more stable configuration, since fewer loads would be tied into the Unit 1 I/A system. When the Plant Control Operator (PCO, licensed, utility) referred to the Unit 1 Instrument Air Operating Procedure (OP-118-001), he observed that there was not a section in the procedure describing the Unit 1 - Unit 2 I/A swapping evolution for CWPH loads. Therefore Operations supervision determined the necessary valve manipulations to accomplish the evolution by referring to the Piping and Instrumentation Drawing (P&ID) for I/A. The selected valves were checked and repositioned and the actions taken were documented on the applicable shift logs. On January 4, 1989 a different Operations shift was reviewing the log entries describing the I/A lineup. They believed that this lineup was not correct and did not properly isolate common I/A loads from Unit 1. They initiated action and altered one valve position in an attempt to place I/A in what they believed to be a correct lineup. When this step was taken, I/A was inadvertently isolated from the Unit 1 Cooling Tower basin level instrumentation.

There were several causal factors for this event:

(1) As discussed previously, the reduced reliability of the Unit 1 I/A system initiated the operating evolution that lead to the event.

(2) Loss of status control was another causal factor. Even though the actions taken by the Operations shift utilizing the P&ID deviated from the existing procedures, had valve status been accurately maintained, the event could have been prevented.

(3) The fact that the section describing how to swap CWPH Common I/A loads from Unit 1 to Unit 2 was placed in the Unit 2 Operating procedure but not in the Unit 1 Operating procedure lead the first Operating shift to deviate from normal isolation practice.

CORRECTIVE ACTIONS

1) Programmatic changes will be evaluated to provide an improvement in the system of tracking equipment and valve status. Of particular interest will be control of valves repositioned by Operations during abnormal lineups.

2) Sections describing the CWPH I/A swapping evolution will be placed in both OP-118-001 & OP-218-001.

ADDITIONAL INFORMATION

Failed Component Identification: Not applicable.

Previous Similar Events: Not Applicable.

ATTACHMENT # 1 TO ANO # 8902070150 PAGE: 1 OF 1

Pennsylvania Power & Light Company
Two North Ninth Street . Allentown, PA 18101 . 215/770-5151

February 2, 1989

U.S. Nuclear Regulatory Commission
Document Control Desk
Washington, DC 20555

SUSQUEHANNA STEAM ELECTRIC STATION
LICENSEE EVENT REPORT 89-001-00
FILE R41-2

PLAS - 350

Docket No. 50-387
License No. NPF-14

Attached is Licensee Event Report 89-001-00. This event was determined reportable per 10CFR50.73(a)(2)(iv) in that the Reactor Protection System actuated upon a Turbine Control Valve Fast Closure resulting from a Main Condenser low vacuum condition.

/s/ J. A. BLAKESLEE, JR.
for R. G. Byram
Superintendent of Plant - Susquehanna

TSR/mjm

cc: Mr. W. T. Russell
Regional Administrator, Region I
U.S. Nuclear Regulatory Commission
475 Allendale Road
King of Prussia, PA 19406

Mr. F. I. Young
Sr. Resident Inspector
U.S. Nuclear Regulatory Commission
P.O. Box 35
Berwick, PA 18603-0035

*** END OF DOCUMENT ***